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ABSTRACT

While many studies have documented the negative consequences of excessive television watching, few behavioral programs have investigated techniques for reducing television viewing. A 13-year-old girl who watched from 6 to 9 hours of television daily was provided a behavioral program featuring a token-actuated timer in an attempt to reduce her television viewing time. Baseline data were obtained from parent reports of viewing time for 7 days, and by timer assessed viewing patterns for 10 days. This was followed by a 10-day interval when tokens to be used with the timer were earned by prosocial activities. Each token activated the television for 30 minutes. Immediate reductions in television viewing were found when the child was on the token exchange system. During a 9-day return to baseline phase, increases in viewing were noted, and reductions again occurred with re-exposure to the token condition for 45 days. Following this more extensive intervention, improvement was maintained during the subsequent return to baseline phase. At a 6-month follow-up, when the token-actuated meter was re-attached to the television and the child was given free access to tokens, the child averaged 2.1 hours of television viewing per day. (Author/NRB)

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Reducing a Child's Television Viewing with a Token-Actuated Timer

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Running Head: REDUCING TELEVISION VIEWING

Abstract

While many studies have documented the negative consequences of excessive television viewing, few behavioral programs have investigated techniques for reducing television viewing. In the present study, a youngster evidencing excessive television viewing behaviors was provided a behavioral program featuring a token-actuated timer. Earned tokens were used to activate the television for 30 minute periods of time. After collecting baseline data, immediate reductions in television viewing were found when the youngster was placed on the token exchange system. During a return to baseline phase, increases in viewing were noted, and reductions again occurred when re-exposed to the treatment condition. After a more extended intervention, improvement was maintained during the subsequent return to baseline phase and at a follow-up.

Reducing a Child's Television Viewing with a

Token Activated Timer

By age 18, the average American child has spent more time watching television than engaging in any other activity except sleep (Lesser, 1970). The public and social scientists have been concerned about the amount of time that youngsters devote to television viewing because of the prevalence of violence on television (Gerbner & Gross, 1976) and the relationship between watching television and subsequent aggressive attitudes and behavior (Lefkowitz, Eron, Walder, & Huesmann, 1977). Even more alarming is the finding that about 25 percent of children watch between 4 and 11 hours of television daily (Murray, 1980). Not only is heavy viewing inversely related to school achievement (Rubenstein, 1983), but those who watch excessive amounts have little time for other critical life experiences (e.g., learning how to read, learning social skills, playing imaginative games). Some have even claimed that heavy viewers may be blocking out the real world by retreating into a nonthinking state free of worry and anxiety (White, 1981). Given the findings above, there is a clear need to develop behavior change strategies to reduce television viewing for those youngsters who abuse this leisure time activity.

Several intervention oriented projects with children have been implemented. Eron (1982), for example, had high-violence viewers write paragraphs stating why television violence is

unrealistic and why excessive television viewing is bad. Program children, in comparison to controls, evidenced significantly lower peer-nominated aggression scores at posttesting. Singer and Singer (1983) taught elementary school children about commercials, how programs are produced, and how television presents violence, and this program did help children gain a better understanding of the medium. They also report decreasing youngster's television viewing patterns by showing parents how to use imaginative play and teach cognitive skills to their children. Neither of these projects focused on developing behavioral programs to reduce television watching among heavy users.

For the past few years, researchers at De Paul University have been exploring a variety of behavioral strategies for reducing television viewing. For example, residents of a nursing home reduced their television watching when provided access to materials which facilitated social interactions (Quattrochi-Tubin, & Jason, 1980). College undergraduates have been able to reduce daily viewing by self-monitoring and setting up behavioral contracts (Jason & Smith, 1980: Jason, 1981). Self-monitoring and meter recording have been effective in reducing excessive television viewing among adults in the community (Jason & Klich, 1982).

In a recent series of studies with children, five families were recruited as evidencing excessive television viewing.

Self-monitoring alone was effective in reducing television viewing for children in three of the families (Jason, 1983). With another family, the target youngsters were required to earn tokens in order to be allowed to watch a predetermined amount of television. With onset of the intervention, average viewing for seven family members decreased from 7.5 to 3.7 hours per day (Jason, 1984). With another family, a similar token exchange program was used with a token-actuated meter. With this system, the television set could not be turned on unless the earned token was deposited in the box. With onset of this intervention, the target child's average daily television viewing decreased from 6.4 to 1.6 hours (Jason & Rooney-Rebeck, in press).

A recent study by Wolfe, Mendes, and Factor (1984) had parents monitor their children's television viewing behaviors. At the beginning of each week, the children would receive tokens which could be exchanged for watching particular programs. While the average baseline viewing for the five children was 21 hours per week, with the onset of the intervention, viewing decreased to 10 or fewer hours per week.

While the above studies have suggested that excessive television viewing can be reduced, the conclusions are based on self-report data. In the present study, an electronically controlled device was employed to check the accuracy of parent reported data. In addition, an attempt was made to assess the

participant's viewing behaviors at follow-up points, after the behavioral program was terminated.

Method

Participant

During an interview concerning children's television watching on an early morning television program, the author announced that he was recruiting a family for a television reduction program. One family was selected based on the following criteria: a) the target child watched more than 5 hours of television daily, b) the child was between 4 and 16 years of age, c) there was only 1 television set in the house, and d) at least one parent agreed to daily monitor television viewing.

The child selected for the program was a black, 13 year old female. The mother estimated that her child watched from 6-9 hours each day. The target child's sister, 2 years younger, was not perceived as having a television watching problem. The target child, however, spent most of her leisure time watching television. She was receiving failing grades in school and as a consequence, was in danger of not graduating from junior high school. While the child had watched 3-4 hours of television each day during her early childhood, excessive television watching had begun in the fifth grade. No specific episode could be related to this change in viewing habits. The mother had on many occasions tried talking with her child about reducing the excessive viewing, but the child had refused.

The target child was also described as uncooperative when asked to do household chores. The mother was divorced and worked outside the home during the day.

Measures and Design

The mother initially estimated the number of hours both of her children watched television during the previous 7 days (Baseline 1). For the next 10 days, a token-actuated timer was placed on the television set in order to more reliably assess the target child's viewing patterns (Baseline 2). During the 10 day intervention, tokens to be used with the timer had to be earned (Intervention 1). The next baseline phase was 9 days (Baseline 3), and this was followed by the re-introduction of the intervention for 45 days (Intervention 2). The token-actuated timer was removed from the house after a final 35 day return to baseline phase (Baseline 4). Follow-up data were also collected.

In addition, immediately prior to Baseline 1 and at the end of Baseline 4, the mother filled out a one-day log of the target child's activities for an entire Saturday. On this log, the mother recorded her child's activities, when each began and finished, for an entire day.

The token-actuated timer is a monostable multivibrator (Durbin & Jason, in press). If a valid token is detected, then a 30 minute timer is activated and a relay is energized thereby connecting the television set to the house line

current. A valid token is distinguised by the amount of time it takes to pass the infrared detector as well as the presence of a hole in its center. Each time the 30 minute timer is triggered, the token counter is also incremented. The token count is displayed in an inverted binary format. The token counter provides an independent confirmation of the number of tokens used. Each day, the mother reports the number of tokens deposited in the timer (only the mother has the key to open the timer and retrieve the tokens) and the light pattern for the token counter (The lights are in a binary pattern. The mother did not know what the light pattern referred to). The house line current for the television is brought out via a female plug which is connected to a plug leading into the timer. The connection between television plug and timer plug is contained in another box which has a lockable hinged lid (only the experimenter had access to this key). This means that the child could not unplug the television from the timer and replug it into a standard wall outlet. The lower end of the detector shaft assembly is terminated in a hook constructed from stiff drawn wire. This hook prevented the child from tying a string to a token and then repeatedly lowering and raising the token.

In the Wolfe, Mendes, and Factor's (1984) study, television watching was not counted if the children watched 10 or less

minutes during a fifteen minute period, or if the children were primarily playing with friends while the television was on. The target child in the present study exclusively watched television when the set was on. Confirmation of this pattern was obtained from the mother, sister, and observations on several occasions by the author.

Procedures

Both children were involved in the intervention, because the parent felt that conflict would arise if only one sister was in the project. Only the target child used the token-actuated meter. The other sister used coupons which were deposited in a separate box on the television set. During Baselines 2, 3, and 4, the target child had free access to the tokens, and the nontarget child had open access to coupons. During interventions 1 and 2, the children had to earn tokens or coupons for prosocial activities (e.g., coloring, doing homework, doing chores, playing games, etc.). Some activities earned more tokens than others. The contingencies were raised as the program progressed (one token for 30 minutes of homework, then one token for 60 minutes). Tokens were dispensed at the time of the activity. A specific number of tokens unused at the end of the week could be exchanged for special rewards (e.g., new clothing, money, etc.). The television set could not be turned on unless the token was deposited in the box. Each token

activated the timer which turned the television set on for 30 minutes. If the mother used a token, or the non-target child viewed a program (the mother would then insert a token), the mother would keep a record of these tokens. Each day, the mother recorded the number of tokens used by the target child, and the number used by either the mother or non-target child. On 16 occasions, at least once during each phase, the light pattern (token counter) was also reported. While the mother was called five times each week during the first few phases, in order to collect data, during the later phases, the mother was called weekly.

Consumer Evaluation

At the end of Baseline 4, the mother and target child answered the following questions: "How did you feel about the program to help reduce television watching?" (1 = very positive, 2 = positive, 3 = neutral, 4 = negative, 5 = very negative). "Dif you feel the program was helpful in reducing television watching?" (1 = definitely yes, 2 = yes, 3 = unsure, 4 = no, 5 = definitely no). "Why do you think the program was helpful?"

Results

Reliability between the binary token counter and the mothers report was high. On fifteen occasions there was a complete match, on one occasion the parent report and pattern differed by two tokens.

The target child's television viewing behaviors are depicted in Figure 1. During Baseline 1, the mother estimated her child

— Insert Figure 1 about here —

watched an average of 7 hours each day, and this was confirmed during Baseline 2 with the token-actuated meter (average use was 6.7 hours). During the first intervention, television watching averaged .8 hours, but increased to 6.2 hours during the return to baseline phase. The levels decreased to 1.6 hours with re-implementation of intervention, and this low rate was maintained during the final baseline phase. At a three month follow-up, the mother reported the target child was averaging 1.5 hours of television watching. At a six-month follow-up, the token-actuated meter was attached to the television, and the target child was given free access to tokens. Television watching averaged 2.1 hours during this week.[1]

The time log at the prepoint indicated that the target child spent 10 hours watching television, 1 hour playing with her sister, and 2 hours at choir rehearsal. At the postpoint, she spent 1 hour watching television, 1½ hours with her family at meals, 2 hours with chores, 2½ hours doing homework, 3 hours at choir practice, and 2 hours practicing a musical instrument and playing games.

Concerning the consumer satisfaction, the mother and child felt very positive about the program ($\underline{M}$ = 1) and both felt the program was definitely helpful ($\underline{M}$ = 1). The child said the following about the program: "I think the program was very helpful because it helped me stop watching TV alot. It helped me to raise my grades. I think every kid should try it because it helps." The mother said: "It geared her into other areas that she wouldn't have gone into without the program (swimming, musical instruments, interviewer at church). Her grades in science increased from Ds to As and she recently won the second prize in a science fair."

Discussion

The study's major finding was that a simple token exchange system involving a token-actuated meter was effective in reducing a youngster's excessive television viewing. While the target youngster was watching approximately 7 hours of television each day during the first baseline, this level had decreased to 1½ hours by the end of treatment and at a follow-up period. The data involved the parent's report of the number of tokens deposited in the meter and a binary light pattern. The token counter, for the most part, confirmed the parent's report of the number of hours the child watched television.

While the first intervention phase was effective in immediately reducing daily hours of viewing, the subsequent

baseline data indicated that the changes were not maintained. In other words, only 10 days of an intervention were not sufficient to bring about enduring changes. This finding is similar to the results of the Jason and Rooney-Rebeck (in press) investigation. After a more extended period of time, the target youngster in the present study did manifest low levels of television watching which were maintained during the subsequent return to baseline phase. The success of the second intervention was a function of providing the child a long enough period to experience the reinforcement of alternative activities. While the child was earning tokens for going swimming, practicing an instrument, playing with friends, these alternative activities provided sufficient interest and satisfaction that they continued even when tokens were no longer provided. The token exchange enabled the child to shift her attention from an exclusive preoccupation with reinforcement derived from television to reinforcement derived from more heterogenous and active activities.

At the beginning of the project, the mother had expressed concerned that her daughter might not graduate from junior high school. The poor academic performance was largely a function of refusing to complete homework. Since television dominated her time outside of school, there was little time available for homework, social contact with friends, or development of hobbies. The child initially did not like the idea of

having to earn tokens to watch television, however, this initial resistance was soon replaced with a more positive appreciation of the intervention. As she began to develop new interests, obtain social approval and tokens for doing chores, and improve performance in school, the child found television viewing as less exciting and rewarding than the new activities she was engaging in. By the end of the project, and at the follow-up, the child was no longer in jeopardy of not graduating, her school performance had improved considerably, and her mother reported that she now complied with requests to do household chores.

The present study needs to be replicated with other youngsters who watch an excessive amount of television. In addition, there is a need to collect more long-term follow-up data to assess whether the improvements are maintained. In the present study, there were two children in the household, and this did initially present somewhat of a problem. Fortunately, the nontarget child tended to watch less television, and when she did watch television, it was usually during the same time as the target child.

In summary, the present study suggests that it is possible to reverse a long-standing pattern of excessive television viewing with an adolescent youngster. The key to the program appears to be shifting the child's source of reinforcement from more passive television viewing to more active activities in the real world. Although social scientists have invested considerable

time and effort in documenting many of the adverse outcomes of excessive television viewing, few behavior change efforts have been studied. Clearly there is a need for more research investigating the process of bringing about behavior change in children and adults who tend to abuse this leisure-time activity.

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Author Notes

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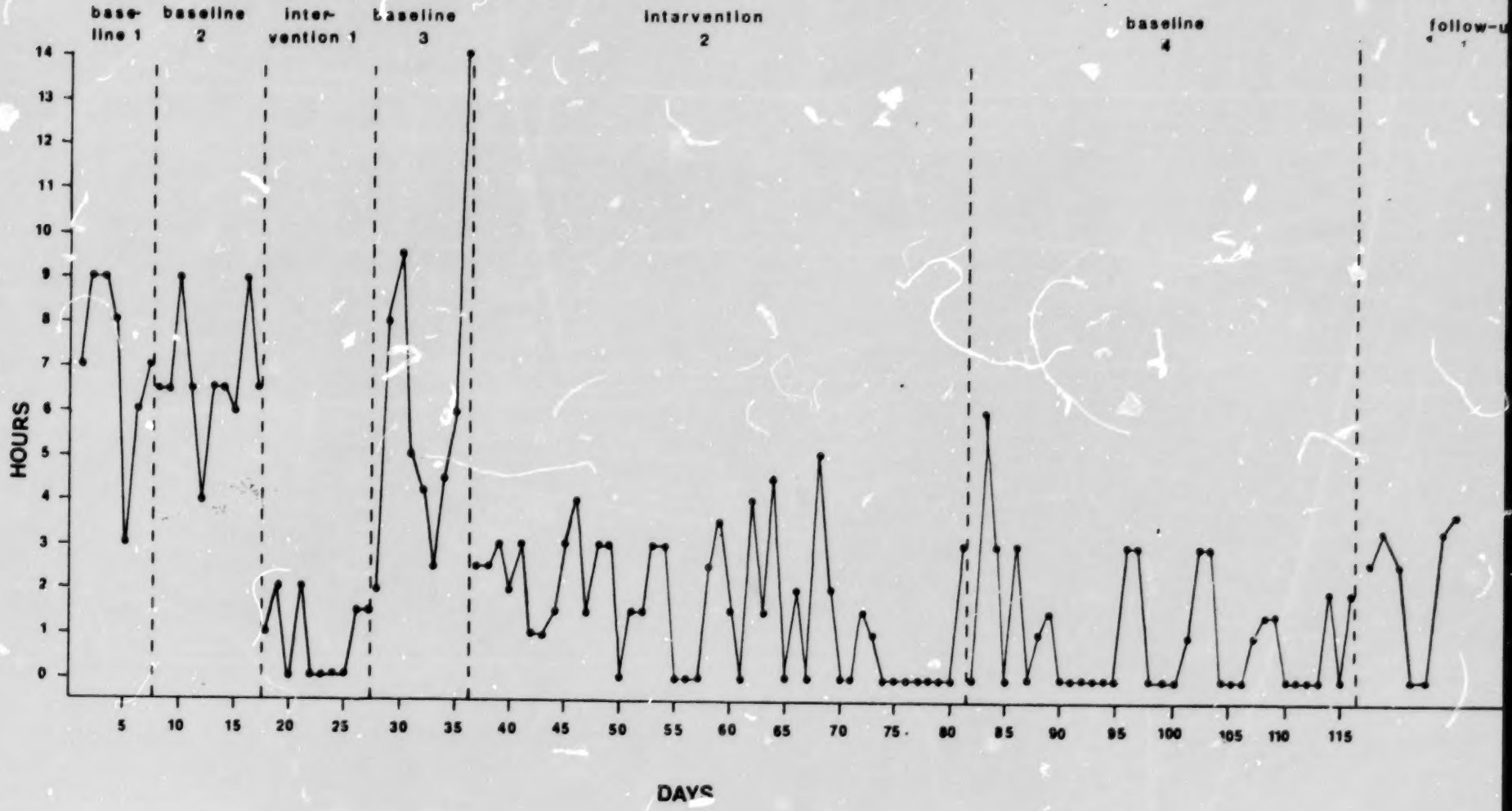
Footnotes

[1] For the nontarget child, the average daily television watching rates were 4.7 hours (Baseline 1), 3.0 hours (Baseline 2), .8 (Treatment 1), 2.2 (Baseline 3), 1.0 (Treatment 2), .4 (Baseline 4), .5 (3-month follow-up), and 1.9 (6-month follow-up).

The mother reported that the children's television watching at the six month follow-up was higher than usual because several summer-time activities, which the children had been involved in, had ended just prior to data collection. The mother reported that she was still very pleased with the behavioral program and its positive affects in reducing her children's television viewing.

Figure 1

Figure Caption: Number of hours television was watched by the target child each day.



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